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IN THE UNITED STATES PATENT AND
TRADEMARK OFFICE

Applicants: John L. Schenk and Allison C. Lindsey
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Assignee: XY, Inc.
Attorney Docket: XY-Optimum-USNP
Customer No. 33549

CERTIFICATE OF EXPRESS MAILING

I, Cheryl A. Swanson, hereby certify to the truth of the following items:

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<p>IN THE UNITED STATES PATENT AND TRADEMARK OFFICE</p> <p>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</p>	APPLICATION NO:	10/522320
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	FIRST NAMED INVENTOR:	John L. Schenk
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I. U.S. PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NO. & KIND CODE (if known)	PUB'N DATE mm-dd-yyyy	PATENTEE OR APPLICANT NAME	FILIN DATE
	2004/0132001 A1	07/08/2004	Seidel et al.	11/29/2001
	32,350	02/10/87	Bhattacharya	11/22/74
	3,687,806	08/29/72	Van den Bovenkamp	11/04/69
	3,829,216	08/13/74	Persidsky	
	3,894,529	07/15/75	Shrimpton	04/10/69
	4,009,260	02/22/77	Ericsson	12/11/74
	4,067,965	01/10/78	Bhattacharya	12/17/75
	4,083,957	04/11/78	Lang	02/04/76
	4,085,205	04/18/78	Hancock	01/24/77
	4,092,229	05/30/78	Bhattacharya	10/20/76
	4,155,831	05/22/79	Bhattacharya	02/23/78
	4,191,749	03/04/80	Bryant	10/11/77
	4,225,405	09/30/80	Lawson	08/16/78
	4,276,139	06/30/81	Lawson	10/09/79
	4,339,434	07/13/82	Ericsson	08/17/81
	4,362,246	12/07/82	Adair	07/14/80
	4,448,767	05/15/84	Bryant	02/15/80
	4,511,661	04/16/85	Goldberg	12/30/83
	4,660,971	04/28/87	Sage et al.	05/03/84
	4,680,258	07/14/87	Hammerling et al	08/09/83
	4,698,142	10/06/87	Muroi et al	07/31/85
	4,749,458	06/07/88	Muroi et al	03/02/87
	4,988,619	01/29/91	Pinkel	1/30/87
	4,999,283	03/12/91	Zavos et al	08/18/89
	5,021,244	06/04/91	Spaulding	05/12/89
	5,135,759	08/04/92	Johnson	04/26/91

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DT Rec'd PCT/PTO 24 JAN 2005

	5,346,990	09/13/94	Spaulding	03/12/91
	5,371,585	12/06/94	Morgan et al.	11/10/92
	5,439,362	08/08/95	Spaulding	07/25/94
	5,466,572	11/14/95	Sasaki et al.	04/25/94
	5,483,469	01/09/96	Van den Engh et al.	08/02/93
	5,514,537	05/07/96	Chandler	11/28/94
	5,589,457	12/31/96	Wiltbank	07/03/95
	5,602,039	02/11/97	Van den Engh	10/14/94
	5,602,349	02/11/97	Van den Engh	10/14/94
	5,660,997	08/26/97	Spaulding	06/07/95
	5,690,895	11/25/97	Matsumoto et al.	12/06/96
	5,700,692	12/23/97	Sweet	09/27/94
	5,726,364	03/10/98	Van den Engh	02/10/97
	5,985,216	11/16/99	Rens et al.	07/24/97
	6,071,689	06/06/00	Seidel et al.	01/29/98
	6,071,689	06/06/00	Seidel et al.	01/29/1988
	6,149,867	11/21/00	Seidel et al.	12/31/1997
	6,263,745 B1	07/24/01	Buchanan et al.	12/03/1999
	6,395,305 B1	05/28/02	Buhr et al.	06/30/00
	6,372,422	04/16/02	Seidel et al.	11/24/99
	6,524,860 B1	02/25/03	Seidel et al.	02/23/2000
	6,617,107 B1	09/09/03	Dean	02/03/1999

II. FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL	Foreign Patent Document Country Code, Number, Kind Code (if known)	PUB'N DATE mm-dd- yyyy	PATENTEE OR APPLICANT NAME	TRANSLATION	
				Yes	No
	WO 2004/087177 A1	10/14/2004	Monsanto Technology LLC		
	WO 2004/088283 A2	10/14/2004	Monsanto Technology LLC		
	WO 00/06193	02/10/00	Colorado State University Research Foundation (C.S.U.R.F.)		
	WO 00/06193	07/30/1998	XY, Inc.; C.S.U.R.F.		
	WO 01/95815 A1	06/12/00	XY, Inc.; C.S.U.R.F.		
	WO 02/28311 A1	10/05/00	XY, Inc.		
	WO 02/43486 A1	11/29/00	XY, Inc.; C.S.U.R.F.		
	WO 96/12171	10/13/95	University of Washington		
	WO 98/34094	08/06/98	The Horticulture & Food Research Institute of New Zealand Ltd.		

	WO 99/05504	07/24/98	U.S.A. represented by the Secretary of Agriculture		
	WO 99/33956	07/08/99	C.S.U.R.F.		
	WO 99/38883	08/05/99	Dean, Alan D.		
	WO 99/42810	08/26/99	C.S.U.R.F.		

III. OTHER DOCUMENTS (Including Author, title, Date, Pertinent Pages, Etc.)

	"Applying Semen Sexing Technology to the AI Industry", National Association of Animal Breeders, September 2000, pp. 1-16
	Akhtar, S., et al. 1995. Prevalence of Five Stereotypes of Bluetongue Virus in a Rambouillet Sheep Flock in Pakistan", Veterinary Record 136, p. 495.
	Amann, R.P. and Seidel, G.E. Jr., 1982. Prospects For Sexing Mammalian Sperm," Animal Reproduction Laboratory College of Veterinary Medicine and Biomedical Sciences, Colorado State University ()
	Amoah, E.A. and Gelaye, S. 1996. Biotechnological advances in goat reproduction. J. Anim. Sci. 75(2):578-585.
	Anderson, V.K., et al., 1973. Intrauterine und tiefzervikale Insemination mit Gefriersperma beim Schaf. Zuchthygiene. 8:113-118
	Baker, R.D., et al., H.W. 1968. Effect of volume of semen, number of sperm and drugs on transport of sperm in artificially inseminated gilts. J. Anim. Sci. 27:88-93
	Batellier, F, Vidament M, Duchamp G, Arnaud G, Yvon JM, Fauquant J, Magistrini M., Advances in cooled technologies. Anim Reprod Sci 2001; In press.
	Barnes, F.L. and Eyestone, W.H., "Early Cleavage and the Maternal Zygotic Transition in Bovine Embryos", Theriogenology, Vol. 33, No. 1, January 1990, pp. 141-149
	Becker, S.E. and Johnson, A.L. 1992. Effects of gonadotropin releasing hormone infused in a pulsatile or continuous fashion on serum gonadotropin concentrations and ovulation in the mare. J. Anim. Sci. 70:1208-1215.
	Bedford, S. J. and Hinrichs, K. 1994. The effect of insemination volume on pregnancy rates of pony mares. Theriogenology 42:571-578.
	Berger, G.S. 1987. Intratubal insemination. Fert. Steril. 48:328-330.
	Beyhan, Z., et al., 1998. Sexual dimorphism in IVF bovine embryos produced by sperm sorted by high speed flow cytometry. Theriogenology. 49(1):359. abstr.
	Blanchard, T. and Dickson, V., "Stallion Management", The Veterinary Clinics of North America, Equine Practice, Vol. 8, No. 1, pp. 207-218 (1992)
	Bracher, V. and Allen, W.R., "Videoendoscopic Examination of the Mare's Uterus: Findings in Normal Fertile Mares", Equine Veterinary Journal, Vol. 24 (1992), pp. 274-278
	Braselton, W.E. and McShan, W.H. 1970. Purification and properties of follicle stimulating and luteinizing hormones from horse pituitary glands. Arch. Biochem. Biophys. 139:45-48.
	Brethour, J.R. and Jaeger, J.R., "The Single Calf Heifer System", Kansas Agric. Sta. Rep of Progress 570, 1989.
	Bristol, S.P. 1982. Breeding behavior of a stallion at pasture with 20 mares in synchronized oestrus. J. Reprod. Fert. Suppl. 32:71.
	Brookes, A. J. and Obyrne, M., "Use of cow-heifers in beef production", J. of the Royal Agricultural Society of England 126:30. (1965)
	Buchanan, B.R., et al, "Insemination of Mares with Low Numbers of Either Unsexed or Sexed Spermatozoa", Theriogenology, Vol. 53, pp 1333-1344, (2000)
	Burwash, L.D., et al., 1974. Relationship of duration of estrus to pregnancy rate in normally cycling, non-lactating mares. J.A.V.M.A. 165:714-716.
	Caslick, E.A., "The Vulva and the Vulvo-vaginal Orifice and its Relation to Genital Health of the Thoroughbred Mare", Cornell Veterinarian, Vol. 27, 1937, pp. 178-187

	Catt, et al., "Assesment of Ram and Boar Spermatozoa During Cell-Sorting by Flow Cytometry", <i>Reproduction Dom Animal</i> , Vol. 32, pp 251-258 (1997)
	Catt, et al., "Birth of a Male Lamb Derived from an In Vitro Matured Oocyte Fertilized by Intracytoplasmic Injection of a Single Presumptive Male Sperm", <i>Veterinary Record</i> 139, 1996, pp. 494-495.
	Chandler, J.E., "Videomicroscopic Comparison of Bull Sperm and Leukocyte Chromosome Areas as Related to Gender", <i>J Dairy Sci</i> 73, pp. 2129-2135, (1990)
	Chandler, J.E., et al, "Bovine Spermatozoal Head Size Variation and Evaluation of a Seperation Technique Based on this Size", <i>Theriogenology</i> 52, p. 1021-1034 (1999)
	Chin, W.W. and Boime, I. 1990. <i>In: Glycoprotein Hormones. Serona Symp. Norwell, MA.</i> pp. 19-20
	Chung, Y.G., et al., 1998. Artificial insemination of superovulated heifers with 600,000 sexed sperm. <i>J Anim. Sci. Suppl.</i> 1. 836:215. abstr.
	Clement, F., et al., 1998. Which insemination fertilizes when several successive inseminations are performed before ovulation. <i>7th Int. Symp. Eq. Repro.</i> 151. abstr.
	Cran, D.G., et al. 1997. Production of Lambs by Low Dose Intrauterine Insemination With Flow Cytometrically Sorted and Unsorted Semen, <i>Scottish Agricultural College, UK, Theriogenology</i> , p. 267.
	Cran, D.G., et al., 1993. Production Of Bovine Calves Following Separation Of X-Chromosome and Y-Chromosome Bearing Sperm And <i>In Vitro</i> Fertilisation. <i>Vet. Rec.</i> 132:40-41.
	Cran, D.G., et al., 1995. Sex preselection in cattle: a field trial. <i>Vet. Rec.</i> 136:495-496.
	Cui, K., "Size Differences between human X and Y Spermatozoa and prefertilization diagnosis", <i>Molecular Human Reproduction</i> , Vol. 3, No. 1, pp. 61-67, (1997)
	Cui, K., "X Larger than Y", <i>Nature</i> 366, p. 177-118, (1993)
	Curran, S. 1998. <i>In: Equine Diagnostic Ultrasonography. Fetal gender determination. Rantanen & McKinnon. 1st Ed. Williams and Wilkins.</i> pp. 165-169.
	Day, B.N., et al., 1998. Birth of piglets preselected for gender following in vitro fertilization of in vitro matured pig oocytes by X and Y bearing spermatozoa sorted by high speed flow cytometry. <i>Theriogenology</i> . 49(1):360. abstr.
	Dean, P.N., et al., 1978. Hydrodynamic orientation of spermatozoa heads for flow cytometry. <i>Biophys. J.</i> 23:7-13.
	Demick, D.S., et al., 1976. Effect of cooling, storage, glycerization and spermatozoal numbers on equine fertility. <i>J. Anim. Sci.</i> 43:633-637.
	DenDaas, J.H.G., et al., 1998. The relationship between the number of spermatozoa inseminated and the reproductive efficiency of dairy bulls. <i>J Dairy Sci.</i> 81: 1714-1723.
	Dinnyes, A., et al., "Timing of the First Cleavage Post- insemination Affects Cryosurvival of In Vitro-produced Bovine Blastocysts", <i>Molec Reprod develop</i> 53, 1999, pp 318-324.
	Donaldson, L. E., "Effect of Insemination Regimen on Embryo Production in Superovulated Cows", <i>The Veterinary Record</i> , July 13, 1985, pp. 35-37
	Donoghue, A.M., et al., 1996. Timing of ovulation after gonadotropin induction and its importance to successful intrauterine insemination in the tiger (<i>Panthera tigris</i>). <i>J. Reprod. Fert.</i> 107:53-58.
	Douglas, R.H. 1979. Review of superovulation and embryo transfer in the equine. <i>Theriogenology</i> . 11:33-46.
	Douglas, R.H., et al., 1974. Induction of ovulation and multiple ovulation on seasonally-anovulatory mares with equine pituitary fractions. <i>Theriogenology</i> . 2(6): 133-142.
	Duchamp, G., et al., 1987. Alternative solutions to hCG induction of ovulation in the mare. <i>J. Reprod. Fert. Suppl.</i> 35:221-228.
	Evans, M.J. and Irvine, C.H.G. 1977. Induction of follicular development, maturation and ovulation by gonadotropin releasing hormone administration to acyclic mares. <i>Bio. Reprod.</i> 16:452-462.
	Fitzgerald, B.P., et al., 1993. Effect of constant administration of a gonadotropin-releasing hormone agonist on reproductive activity in mares: Preliminary evidence on suppression of ovulation during the breeding season. <i>Am. J. Vet. Res.</i> 54:1746-1751.
	Fluharty, F.L., et al., "Effects of Age at Weaning and Diet on Growth of Calves", <i>Ohio Agri. Res. and Dev. Circular</i> , 1996, 156: 29.
	Foulkes, J.A., et al., 1977. Artificial insemination of cattle using varying numbers of spermatozoa. <i>Vet. Rec.</i> 101:205.

	Francon, M. and Yamamoto, T., "Un Nouveau et tres simple dispositif interferentiel applicable as microscope", <i>Optica Acta</i> 9, p. 395-408 (1962)
	Fugger, E.F., "Clinical Experience with Flow Cytometric Separation of Human X- and Y- Chromosome Bearing Sperm", <i>Theriogenology</i> , Vol. 52, pp. 1435-1440 (1999)
	Fulwyler, M.J. 1965. Electronic separation of biological cells by volume. <i>Science</i> . 150:910.
	Fulwyler, M.J. 1977. Hydrodynamic orientation of cells. <i>J Histochem. Cytochem.</i> 25:781-783.
	Garner, D.L., et al., 1983. Quantification of the X and Y chromosome-bearing spermatozoa of domestic animals by flow cytometry. <i>Biol. Reprod.</i> 28:312-321.
	Ginther, O.J. 1971. Some factors which alter estrus cycle in mares. <i>J. Anim. Sci.</i> 33:1158. abstr.
	Ginther, O.J. 1992. In: <i>Reproductive Biology of the Mare</i> . (2nd Ed.) Equiservices, Cross Plains, WI.
	Gledhill, B.L. 1988. Gender preselection: historical, technical and ethical perspective. <i>Semin Reprod. Endocrinol.</i> 6:385-395.
	Gourley, D.D. and Riese, R.L. 1990. Laparoscopic artificial insemination in sheep. <i>Vet. Clin. N. Amer: Food Anim. Prac.</i> 6(3):615-633.
	Grondahl, C., et al, "In Vitro Production of Equine Embryos", <i>Biology of Reproduction</i> , Monograph Series I, pp. 299-307 (1995)
	Guillou, F. and Combamous, Y. 1983. Purification of equine gonadotropins and comparative study of their acid-dissociation and receptor-binding specificity. <i>Biochem. Biophys. Acta.</i> 755:229-236.
	Gurnsey, M.P., and Johnson, L.A., "Recent improvements in efficiency of flow cytometric sorting of X and Y-chromosome bearing sperm of domestic animals: a review", 1998, New Zealand Society of Animal Protection, three pages.
	Harrison, L.A., et al., 1991. Comparison of hCG, buserelin and luproliol for induction of ovulation in cycling mares. <i>Eq. Vet. Sci.</i> 3:163-166.
	Hofferer, S., et al., 1993. Induction of ovulation and superovulation in mares using equine LH and FSH separated by hydrophobic interaction chromatography. <i>J. Reprod. Fert.</i> 98:597-602.
	Holtan, D.W., et al., 1977. Estrus, ovulation and conception following synchronization with progesterone, prostaglandin F2 and human chorionic gonadotropin in pony mares. <i>J. Anim. Sci.</i> 44:431-437.
	Householder, D.D., et al., 1981. Effect of extender, number of spermatozoa and hCG on equine fertility. <i>J. Equine Vet. Sci.</i> 1:9-13.
	Howard, J.G., et al., 1991. Comparative semen cryopreservation in ferrets (<i>Mustela putorius furo</i>) and pregnancies after laparoscopic intrauterine insemination with frozen-thawed spermatozoa. <i>J. Reprod. Fert.</i> 92:109-118.
	Howard, J.G., et al., 1997. Sensitivity to exogenous gonadotropins for ovulation and laparoscopic artificial insemination in the cheetah and clouded leopard. <i>Biol. Reprod.</i> 56:1059-1068.
	Hunter, R.H.F. 1980. Transport and storage of spermatozoa in the female reproductive tract. <i>Proc 4th Int. Congr. Anim. Repro. and A.I.</i> 9:227-233.
	Hyland, J.H., et al., 1988. Gonadotropin-releasing hormone (GnRH) delivered by continuous infusion induces fertile estrus in mares during seasonal acyclicity. <i>Proc. Amer. Assoc. Eq. Prac.</i> 181-190.
	Irvine, C.H.G. and Alexander, S.L. 1993. In: <i>Equine Reproduction</i> . Edited by McKinnon and Voss. Lea and Febiger. Philadelphia, London. pp. 37.
	Jafar, et al., "Sex Selection in Mammals: A Review", <i>Theriogenology</i> , Vol. 46, pp 191-200 (1996)
	Jasko, D.J., et al., "Effect of volume and concentration of spermatozoa on embryo recovery in mares", <i>Theriogenology</i> . 37:1233-1239, 1992
	Jasko DJ, Moran DM, Farlin ME, Squires EL, Amann RP, Pickett BW. Pregnancy rates utilizing fresh, cooled, and frozen-thawed stallion semen. <i>Proc 38th Ann Convention AAEP</i> 1992; 649-660
	Johnson, A.L. "Pulsatile release of gonadotropin releasing hormone advances ovulation in cycling mares", <i>Biol. Reprod.</i> 35:1123 - 1130, 1986
	Johnson, A.L., et al. "Use of gonadotropin-releasing hormone (GnRH) treatment to induce multiple ovulations in the anestrus mare" <i>Eq. Vet. Sci.</i> 8:130-134, 1988
	Johnson, L., "Sex Preselection in Swine: Flow Cytometric Sorting of X- and Y- Chromosome Bearing Sperm to Produce Offspring", <i>Boar Semen Preservation IV</i> , 2000, pp. 107-114.
	Johnson, L.A., "Sex Preselection in Rabbits: Live Births from X and Y Sperm Separated by DNA and Cell

Sorting" Biology of Reproduction, Vol. 41, pp. 199-203 (1989)
Johnson, L.A., "Advances in Gender Preselection in Swine" Journal of Reproduction and Fertility Supplement, Vol. 52, pp. 255-266 (1997)
Johnson, L.A., "Sex Preselection in Swine: Altered Sex Ratios in Offspring Following Surgical Insemination of Flow Sorted X- and Y- Bearing Sperm", Reproduction in Domestic Animals, Vol. 26, pp. 309-314 (1991)
Johnson, L.A. 1994. Isolation of X- and Y-bearing spermatozoa for sex preselection. In: Oxford Reviews of Reproductive Biology. Ed. HH Charlton. Oxford University Press. 303-326.
Johnson, L.A. 1995. Sex preselection by flow cytometric separation of X and Y chromosome bearing spermatozoa based on DNA difference: a review. Reprod. Fert. Dev. 7:893-903.
Johnson, L.A. 1997. Advances in gender preselection in swine. J Reprod. Fert. Suppl. 52:255-266.
Johnson, L.A., "Gender preselection in Mammals: An overview", Deutsch. Tierarztl. Wschr, Vol. 103, pp 288-291 (1996)
Johnson, L.A., "Flow cytometric determination of spermatozoa sex ratio in semen purportedly enriched for X or Y bearing spermatozoa" Theriogenology. 29:265. abstr.
Johnson, L.A., "Gender preselection in domestic animals using flow cytometrically sorted sperm" J Anim. Sci. Suppl 1.70:8-18. 1992
Johnson, L.A., "The safety of sperm selection by flow cytometry" Ham. Reprod. 9(5):758, 1994
Johnson, L.A., et al. "Sex Preselection: High-speed flow cytometric sorting of X and Y sperm for maximum efficiency", Theriogenology, Vol. 52, (1999), pp. 1323-1341
Johnson, L.A., et al., "Enhanced flow cytometric sorting of mammalian X and Y sperm: high speed sorting and orienting nozzle for artificial insemination", Theriogenology. 49(1):361. abstr., 1988
Johnson, L.A., et al., "Flow sorting of X and Y chromosome bearing spermatozoa into two populations", Gam. Res. 16:203-212, 1987
Johnson, L.A., et al., "Improved flow sorting resolution of X- and Y- chromosome bearing viable sperm separation using dual staining and dead cell gating" Cytometry 17 (suppl 7) 83, 1994
Johnson, L.A., et al. "Modification of a Laser-Based flow Cytometer for High-Resolution DNA Analysis of Mammalian Spermatozoa", Cytometry 7, pp 268 - 273 (1986)
Johnson, L.A., "Flow sorting of X and Y chromosome-bearing sperm for DNA using an improved preparation method and staining with Hoechst" 33342. Gam. Res. 17:1-9, 1987
Kachel, et al., "Uniform Lateral Orientation, Cused by Flow Forces, of Flat Particles in Flow-Through Systems", The Journal of Histochemistry and Cytochemistry, 1997, Vol. 25, No. 7, pp 774 -780.
Kanayama, K., et al., 1992b. Pregnancy by means of tubal insemination and subsequent spontaneous pregnancy in rabbits. J. Int. Med. Res. 20:401-405.
Kilicarslan, M.R., et al., 1996. Effect of GrnRH and hCG on ovulation and pregnancy in mares. Vet. Rec. 139:119-120.
Lapin, D.R. and Ginther, O.J. 1977. Induction of ovulation and multiple ovulations in seasonally anovulatory and ovulatory mares with an equine pituitary extract. J. Anim. Sci. 44:834-842.
Lawrenz, R. 1985. Preliminary results of non-surgical intrauterine insemination of sheep with thawed frozen semen. J S Afr. Vet. Assoc. 56(2):61-63.
Levinson, G., et al., 1995. DNA-based X-enriched sperm separation as an adjunct to preimplantation genetic testing for the preparation of X-linked disease. Mol. Human Reprod. 10:979-982.
Lindsey, A., et al., "Hysteroscopic Insemination of Mares with Nonfrozen Low-dose Unsexed or Sex-sorted Spermatozoa", currently unpublished, pp. 1-15.
Lindsey, AC, Bruemmer JE, Squires EL. Low dose insemination of mares. Animal Reproduction Science 2001; In press
Linge, F. 1972. Faltforsok med djupfrost sperma (field trials with frozen sperm). Farskotsel. 52:12-13.
Lonergan, P., et al., "Effect of Time Interval from Insemination to First Cleavage on the Development of Bovine Embryos In Vitro and In Vivo", Theriogenology, 1999, p. 326
Long, C.R., et al., 1998. Theriogenology. 49(1):363. abstr.
Loy, R.G. and Hughes, J.P. 1965. The effects of human chorionic gonadotropin on ovulation, length of estrus, and fertility in the mare. Cornell Vet. 56:41-50.
Macmillan, K.L. and Day, A.M., "Prostaglandin F2a : A Fertility Drug In Dairy Cattle?", Animal Research

	Station, Private Bag, Hamilton, New Zealand, Theriogenology, Vol. 18 No. 3, pp. 245-253 (1982)
	Matsuda, Y. and Tobari, I. 1988. Chromosomal analysis in mouse eggs fertilized <i>in vitro</i> with sperm exposed to ultraviolet light (UV) and methyl and ethyl methanesulfonate (MMS and EMS). <i>Mutat. Res.</i> 198:131-144.
	Maxwell, W and Johnson, L., "Chlortetracycline Analysis of Boar Spermatozoa after Incubation, Flow Cytom Sorting, Cooling, or Cryopreservation", <i>Molecular Reproduction and Development</i> 46, 1997, pp. 408-418
	Maxwell, W.M.C., et al., 1993. Fertility of Superovulated Ewes after Intrauterine or Oviductal Insemination with Low Numbers of Fresh or Frozen-Thawed Spermatozoa. <i>Reprod. Fertil. Dev.</i> 5:57-63.
	Maxwell WMC, Long CR, Johnson LA,, Dorbrinsky JR, Welch GR. The relationship between membrane status and fertility of boat spermatozoa after flow cytometric sorting in the presence or absence of seminal plasma. <i>Reprod Fertil Dev</i> 1998; 10:433-440
	McCue, P.M. 1996. Superovulation. <i>Vet. Clin. N. Amer. Eq. Prac.</i> 12:1-11.
	McCue, P.M., et al., 1997. Oviductal insemination in the mare. 7th Int Symp. Eq. Reprod. 133. abstr.
	McDonald, L.E. 1988. Hormones of the pituitary gland. <i>In: Veterinary Pharmacology and Therapeutics</i> . 6th ed. Edited by N.H. Booth and L.E. McDonald. Ames, Iowa State Univ. Press. pp. 590.
	McKenna, T. et al., 1990. Nonreturn rates of dairy cattle following uterine body or cornual insemination. <i>J. Dairy Sci.</i> 73:1179-1783.
	McKinnon, A.O. and Voss, J.L. 1993. <i>In: Equine Reproduction</i> . Lea and Febiger. Philadelphia, London.
	McKinnon, A.O., et al., 1993. Predictable ovulation in mares treated with an implant of the GnRH analogue deslorelin. <i>Eq. Vet. J.</i> 25:321-323.
	McKinnon, A.O., et al., 1996. Repeated use of a GnRH analogue deslorelin (Ovuplant) for hastening ovulation in the transitional mare. <i>Eq. Vet. J.</i> 29:153-155.
	McNutt, et al., "Flow Cytometric Sorting of Sperm: Influence on Fertilization and Embryo/Fetal Development in the Rabbits", <i>Molecular Reproduction and Development</i> , Vol. 43, pp 261-267 (1996)
	Meinert, C., et al., "Advancing the time of ovulation in the mare with a short-term implant releasing the GnRH analogue deslorelin", <i>Equine Veterinary Journal</i> , 25, pp 65-68 (1993)
	Merton, J., et al., "Effect of Flow Cytometrically Sorted Frozen/Thawed Semen on Success Rate of In Vitro Bovine Embryo Production", <i>Theriogenology</i> 47, 1997, pp. 295.
	Meyers, P.J., et al., 1997. Use of the GnRH analogue, deslorelin acetate, in a slow release implant to accelerate ovulation in oestrous mares. <i>Vet. Rec.</i> 140:249-252.
	Michaels, Charles, "Beef A.I. Facilities that work", <i>Proc. Fifth N.A.A.B Tech. Conf. A.I. Reprod.</i> Columbia, MO. pp. 20-22.
	Michel, T.H., et al., 1986. Efficacy of human chorionic gonadotrophin and gonadatrophin releasing hormone for hastening ovulation in Thoroughbred mares. <i>Eq. Vet. J.</i> 6:438-442.
	Miller, S.J. 1986. <i>Artificial Breeding Techniques in Sheep</i> . In Morrow, D.A. (ed): <i>Current Therapy in Theriogenology</i> 2. Philadelphia, WB Saunders.
	Mirskaja, L.M. and Petrapavlovskii, V.V. 1937. The reproduction of normal duration of heat in the mare by the administration of Prolan. <i>Probl. Zivotn. Anim. Breed. Abstr.</i> 5:387.
	Molinia, F.C., et al., 1998. Successful fertilization after superovulation and laparoscopic intrauterine insemination of the brushtail possum, <i>Trichosurus vulpecula</i> , and tammar wallaby, <i>Macropus eugenii</i> . <i>J.Reprod. Fert.</i> 112:9-17.
	Moran DM, Jasko, DJ, Squires EL, Amann RP. Determination of tempature and cooling rate which induce cold shock in stallion spermatozoa. <i>Theriogenology</i> 1992; 38:999-1012
	Morcom, C.B. and Dukelow, W.R. 1980. A research technique for the oviductal insemination of pigs using laparoscopy. <i>Lab. Anim. Sci.</i> 1030-1031.
	Morris, L.H., et al., "Hysteroscopic insemination of small numbers of spermatozoa at the uterotubal junction of preovulatory mares", <i>Journal of Reproduction and Fertility</i> , Vol. 118, pp. 95-100 (2000)
	Muller, W. and Gautier, F. 1975. Interactions of heteroaromatic compounds with nucleic acids. <i>Euro. J Biochem.</i> 54:358.
	Munne, S. 1994. Flow cytometry separation of X and Y spermatozoa could be detrimental to human embryos. <i>Hum. Reprod.</i> 9(5):758
	Nowshari, et al., "Superovulation of Goats with Purified pFSH Supplemented with Defined Amounts of pLH", <i>Theriogenology</i> , Vol 43, pp 797-802 (1995)

	Pace, M.M. and Sullivan, J.J. 1975. Effect of timing of insemination, numbers of spermatozoa and extender components on pregnancy rates in mares inseminated with frozen stallion semen. J Reprod. Fert. Suppl. 23:115-121.
	Parrish, J.J. "Capacitation of Bovine Sperm by Heparin", Department of Meat and Animal Science, Biology Of Reproduction 38, pp 1171-1180 (1988)
	PCT application PCT/US99/17165, filed 28 July 1999, entitled "Equine System for Non-Surgical Artificial Insemination".
	PCT application, PCT/US98/27909, filed 31 December 1998, entitled "Commercially Practical Sex-Specific Insemination of Mammals".
	Peippo, J., et al., "Sex diagnosis of equine preimplantation embryos using the polymerase chain reaction", Theriogenology, Vol. 44 619-627 (1995)
	Perry, E.J. 1968. Historical Background In: <i>The Artificial Insemination of Farm Animals</i> . 4th ed. Edited by E.J. Perry. New Brunswick, Rutgers University Press, pp. 3-12.
	Petersen, G.A., et al., "Cow and Calf Performance and Economic Considerations of Early Weaning of Fall-Born Beef Calves", J. Anim. Sci., 1987, 64:15, pp 15-22.
	Pickett, B.W., et al., 1976. Factors influencing the fertility of stallion spermatozoa in an A.I. program. Proc. 8th Internat. Congr. Anim. Reprod. A.I. Krakow, Poland. 4: 1049 - 1052.
	Pickett, B.W. and Back, D.G. 1973. Procedures for preparation, collection, evaluation and insemination of stallion semen. C.S.U. Exp. Sta. Artira. Reprod. Lab. Gen. Series Bull. 935.
	Pickett, B.W., and Shiner, K.A., "Recent developments in artificial insemination in horses", Livestock Production Science, 40, pp 31-36 (1994)
	Pickett, B.W., et al., 1974. The effect of extenders, spermatozoal numbers and rectal palpation on equine fertility. Proc. Fifth N.A.A.B Tech. Conf. A.I. Reprod. Columbia, MO. pp. 20-22.
	Pickett, B.W., et al., 1975b. Effect of seminal extenders on equine fertility. J. Anim. Sci. 40:1136-1143.
	Pickett, B.W., et al., 1978. Influence of seminal additives and packaging systems on fertility of bovine spermatozoa. J. Anim. Sci. Suppl. II. 47:12.
	Pickett, B.W., et al., 1989. Management of the mare for maximum reproductive efficiency. C.S.U. Anim. Repro. Lab. Bull. No. 06. Fort Collins CO.
	Pinkel, D., et al., "Flow Cytometric Determination of the Proportions of X- and Y- Chromosome-Bearing Sperm in Samples of Purportedly Separated Bull Sperm", Journal of Animal Science, Vol. 60, pp 1303 - 1307 (1998)
	Pinkel, D., et al., 1982b. High resolution DNA measurements of mammalian spermatozoa. Cytometry. 3:1-9.
	Province CA, Squires EL, Pickett BW, Amann RP. Cooling rates, storage temperatures and fertility of extended equine spermatozoa. Theriogenology 1985; 23:925-934
	Rath, D., et al., "Low Dose Insemination Technique in the Pig", Boar Semen Preservation IV, 2000, pp. 115-118.
	Rath, D., et al., "Production of Piglets Preselected for Sex Following in Vitro Fertilization with X and Y Chromosome-Bearing Spermatozoa Sorted by Flow Cytometry", Theriogenology, 47, pp. 795 - 800 (1997)
	Reiling, B.A., et al., "Effect of Prenatal Androgenization on Performance, Location, and Carcass and Sensory Traits on Heifers in Single Calf Heifer System", J. Anim. Sci., 1995, 73: 986, pp 986-992.
	Rens, W., et al., "A Novel Nozzle for More Efficient Sperm Orientation to Improve Sorting Efficiency of X and Y Chromosome-Bearing Sperm", Technical Notes, Cytometry 33, 1998, pp 476-481.
	Rens, W., et al., "Improved Flow Cytometric Sorting of X- and Y- Chromosome Bearing Sperm: Substantial Increase in Yield of Sexed Semen", Molecular Reproduction and Development, 1999, pp 50-56.
	Rieger, D., et al., "The Relationship Between the Time of First Cleavage of Fertilized Cattle Oocytes and Their Development to the Blastocyst Stage", Theriogenology, 1999, pp. 190.
	Rigby SL, Lindsey AC, Brinsko SP, Blanchard TL, Love CC, Varner DD. Pregnancy rates on mares following hysteroscopic or rectally-guided utero-tubal insemination with low sperm numbers. Proc 3 rd International Symposium on Stallion Reproduction 2001; 49 (abstr.)
	Ritar, A. and Ball, A. 1991. Fertility of young cashmere goats after laparoscopic insemination. J. Agr. Sci. 117:271-273.
	Roberts, J.R. 1971. In: Veterinary Obstetrics and Genital Diseases. Ithaca, New York. pp. 740-749.

Roser, JF., et al., 1980. Reproductive efficiency in mares with anti-hCG antibodies. Proc 9th Int. Congr. Anim. Repro. and A.I. 4:627. abstr.
Roth, T.L., et al., 1997. Effects of equine chorionic gonadotropin, human chorionic gonadotropin, and laparoscopic artificial insemination on embryo, endocrine, and luteal characteristics in the domestic cat. Bio Reprod. 57:165-171.
Rowley, H-S., et al., 1990. Effect of insemination volume on embryo recovery in mares. J. Equine Vet. Sci. 10:298-300.
Salamon, S. 1976. Artificial Insemination of Sheep. Chippendale, New South Whales. Publicity Press. p.83-84.
Salisbury, G.W. and VanDemark, N.L. 1961. Physiology of Reproduction and Artificial Insemination of Cattle. San Francisco: Freeman and Company.
SAS, SAS/STAT ® User's Guide (Release 6.03), SAS Inst. Inc., Cary, NC., 1988.
Schenk, J.L., "Cryopreservation of flow-sorted bovine spermatozoa", Theriogenology, Vol. 52, 1375-1391 (1999)
Schenk, J.L. and Seidel, Jr., G.E., "Imminent Commercialization of Sexed Bovine", Proceedings, The Range Beef Cow Symposium XVI, 1999, pp 89-96.
Schmid R.L., et al, "Fertilization with Sexed Equine Spermatozoa Using Intracytoplasmic Sperm Injection and Oviductal Insemination", 7th International Symposium On Equine Reproduction, pp. 139 (Abstract) (1998)
Seidel, G. Jr., "Use of Sexed Bovine Sperm for In Vitro Fertilization and Superovulation", Animal Reproduction and Biotechnology Laboratory, Colorado State University, Proceedings of the 2000 CETA/ACTE Convention, Charlottetown, Prince Edward Island, August 2000, pp. 22-24.
Seidel, G.E. Jr, et al., "Artificial Insemination of Heifers with Cooled, Unfrozen Sexed Semen ", Theriogenology, Vol. 49 pp. 365 (Abstract) (1998)
Seidel, G.E. Jr, et al., "Insemination of Heifers with Sexed Sperm ", Theriogenology, Vol. 52, pp. 1407-1421 (1999)
Seidel, G.E. Jr., "Uterine Horn Insemination of Heifers With Very Low Numbers of Nonfrozen and Sexed Spermatozoa", Atlantic Breeders Cooperative, Theriogenology 48: pp. 1255-1264, (1997)
Seidel, G.E. Jr., et al., 1998. Artificial insemination of heifers with cooled, unfrozen, sexed semen. 1998. Theriogenology. 49(1):365. abstr.
Seidel, G.E. Jr., et al., 1999. Insemination of heifers with sexed frozen or sexed liquid semen. Theriogenology. 51. (in press). abstr.
Seidel, G.E., "Status of Sexing Semen for Beef Cattle", Texas A&M University 45th Annual Beef Cattle Short Course and Trade Show Proceedings, August 9-11, 1999; pp. III 24-III 27
Seidel, Jr., G. E., "Artificial Insemination With X-and Y-Bearing Bovine Sperm", Animal Reproduction and Biotechnology Laboratory, Colorado State University, (1996)
Seidel, Jr., G. E., et al, "Insemination of Holstein Heifers With Very Low Numbers Of Unfrozen Spermatozoa", Colorado State University, Atlantic Breeders Cooperative, (1995)
Seidel, Jr., G.E. et al, "Insemination Of Heifers With Very Low Numbers Of Frozen Spermatozoa", Colorado State University (1996)
Senger, P.L., et al., 1988. Influence of comual insemination on conception rates in dairy cattle. J Anim. Sci. 66:3010-3016.
Shelton, J.N. and Moore, N.W. 1967. The response of the ewe to pregnant serum mare gonadotropin and to horse anterior pituitary extract. J. Reprod. Fert. 14:175 - 177.
Shilova, A.V., et al., 1976. The use of human chorionic gonadotrophin for ovulation date regulation in mares. VIIIth Int. Congr. On Anim. Repro. and A.I. 204-208.
Squires, E., "Simultaneous Analysis of Multiple Sperm Attributes by Flow Cytometry", Diagnostic Techniques and Assisted Reproductive Technology, The Veterinary Clinics of North America, Equine Practice, Vol. 12, No. 1, pp127 - 130 (1996)
Squires, E.L, et al., 1994. Effect of dose of GnRH analogue on ovulation in mares. Theriogenology. 41:757-769.
Squires, E.L., "Early Embryonic Loss" in Equine Diagnostic Ultrasonography, 1 st Ed. pp 157-163 Eds Rantanen & McKinnon. Williams and Wilkins, Baltimore, Maryland (1998)

	Squires, E.L., et al, "Cooled and frozen stallion semen", Bulletin No. 9, Colorado State University, Ft. Collins, CO. (1999)
	Sullivan, J.J., et al., 1973. Duration of estrus and ovulation time in nonlactating mares given human chorionic gonadotropin during three successive estrous periods. J.A.V.M.A. 162:895-898.
	Sumner, A.T. and Robinson, J.A., "A Difference in Dry mass between the heads of X and Y-bearing human Spermatozoa", J Reprod Fert 48, p. 9-15 (1976)
	Taljaard, T.L., et al., 1991. The effect of the laparoscopic insemination technique on the oestrus cycle of the ewe. J. S Afr. Vet. Assoc. 62(2):60-61.
	Taylor, C.S., "Efficiency of Food Utilization in Traditional and Sex-Controlled Systems of Beef Production", AFRC Animal Breeding Research Organization, West Mains Road, Edinburg EH9 3JQ, pp 401-440.
	Tervit, H.R., et al., "Successful Culture In Vitro of Sheep and Cattle Ova", Agricultural Research Council, Unit of Reproduction Physiology and Biochemistry, University of Cambridge, 1972, p. 493-497
	Van Munster E.B., et al, "Difference in Volume of X- and Y-chromosome Bearing Bovine Sperm Heads Matches Difference in DNA Content" Cytometry 35 p.125-128 (1999)
	Van Munster E.B., et al, "Measurement-based evaluation of optical pathlength distributions reconstructed from simulated differential interference contrast images", Journal of Microscopy 192, Pt. 2, p. 170-176 (1998)
	Van Munster, E.B., "Geslachtsbepaling met interferometrie", Derde prijs NtvN-prijsvraag voor pas-gepromoveerden 65/4, p. 95-98 (1999)
	Van Munster, E.B., et al, "Difference in Sperm Head Volume as a Theoretical Basis for Sorting X & Y-Bearing Spermatozoa: Potentials and Limitations", Theriogenology 52, pp. 1281-1293, (1999)
	Van Munster, E.B., et al, "Reconstruction of optical pathlength distributions from images obtained by a wide field differential interference contrast microscope", Journal of Microscopy 188, Pt. 2, p. 149-157 (1997)
	Vazquez, J. et al., "Nonsurgical Uterotubal Insemination in the Mare", Proceedings of the 44th Annual Convention of the American Association of Equine Practitioners, Vol. 44, pp 68-69 (1998)
	Vazquez, J., et al., "A.I. in Swine; New Strategy for Deep Insemination with Low Number of Spermatozoa Using a Non-surgical Methodology", 14 th International Congress on Animal Reproduction, Vol. 2, Stockholm, July, 2000, p. 289.
	Vazquez, J., et al., "Successful Low-Dose Insemination by a Fiberoptic Endoscope Technique in the Sow ", Proceedings Annual Conference of the International Embryo Transfer Society, Netherlands, Theriogenology, Vol. 53, January, 2000, pp. 201.
	Vazquez, J., et al., "Development of a Non-surgical Deep Intra Uterine Insemination Technique", Boar Semen Preservation IV, IVth International Conference on Boar Semen Preservation, Maryland, pp. 262-263.
	Vazquez, J., et al., "Hypoosmotic Swelling Test as Predictor of the Membrane Integrity in Boar Spermatozoa", Boar Semen Preservation IV, IVth International Conference on Boar Semen Preservation, Maryland, pp. 263.
	Vidament, M., et al., 1997. Equine frozen semen freezeability and fertility field results. Theriogenology. 48:907.
	Vogel, T., et al, "Organization and expression of bovine TSPY", Mammalian Genome, vol. 8, pp. 491-496 (1997)
	Voss, J.L. and Pickett, B.W. 1976. Reproductive management of the broodmare. C.S.U. Exp. Sta. Anim. Reprod. Lab. Gen. Series. Bull. 961.
	Voss, J.L., et al., 1974. Effect of human chorionic gonadotropin on duration of estrous cycle and fertility of normally cycling, nonlactating mares. J.A.V.M.A. 165:704-706.
	Voss, J.L., et al., 1982. Effect of number and frequency of inseminations on fertility in mares. J. Reprod. Fertil. Suppl. 32:53-57.
	Welch G.R., et al., 1994. Fluidic and optical modifications to a FACS IV for flow sorting of X- and Y-chromosome bearing sperm based on DNA. Cytometry 17 (suppl. 7): 74.
	Welch, G., et al., "Flow Cytometric Sperm Sorting and PCR to Confirm Separation of X- and Y- Chromosome Bearing Bovine Sperm", Animal Biotechnology, 6, pp 131 - 139 (1995)
	Wilson, C.G., et al., 1990. Effects of repeated hCG injections on reproductive efficiency in mares. Eq. Vet. Sci. 4:301-308.
	Wilson, M.S. 1993. Non-surgical intrauterine artificial insemination in bitches using frozen semen. J.Reprod. Fert Suppl. 47:307-311.

DTIS Rec'd PCT/PTO 24 JAN 2005

	Windsor, D.P., et al, "Sex Predetermination by Separation of X and Y Chromosome-bearing Sperm: A Review", Reproduction of Fertilization and Development 5, pp. 155-171, (1993)		
	Woods, J. and Ginther, O.J. 1983. Recent studies related to the collection of multiple embryos in mares. Theriogenology. 19:101 - 108.		
	Woods, J., et al., 1990. Effects of time of insemination relative to ovulation on pregnancy rate and embryonic-loss rate in mares. Eq. Vet. J. 22(6):410-415.		
	XP-002103478, File Biosis, (1988), one page (same as: Hawk, H.W., et al., "Fertilization Rates in Superovulating Cows After Deposition of Semen on the Infundibulum Near the Uterotubal Junction or After Insemination with High Numbers of Sperm", XP-002103478, Theriogenology, Vol. 29, No. 5, pp. 1131-1142 (1988)		
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